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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,233	06/07/2006	Yuichi Fukunaga	278687US0PCT	4292
22850	7590	02/24/2009		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER AHVAZI, BIJAN	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			02/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/551,233	Applicant(s) FUKUNAGA ET AL.	
	Examiner Bijan Ahvazi	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 30, 2008 has been entered.
2. Claims 11-30 are pending. Claims 11 and 30 are amended.
3. The rejection of claims 11-30 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in the view of the Applicants' amendment and argument.
4. The rejection of claims 11-22, and 30 under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490) in view of Tsubouchi *et al.* (Pat. No. US 5,126,065) is withdrawn in the view of the Applicants' amendment and argument.
5. The rejection of claims 23-25, and 29 under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490) and Tsubouchi *et al.* (Pat. No. US 5,126,065) as applied to claim 1- 22, and 30 above, and further in view of Hans-Joachim Weippert (Pat. No. US 5,817,256) is withdrawn in the view of the Applicants' amendment and argument.
6. The rejection claims 26-28 under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490), Tsubouchi *et al.* (Pat. No. US 5,126,065), and Hans-Joachim Weippert (Pat. No. US 5,817,256) as applied to claim 1-25, 29-30 above, and further in view of Hei *et al.* (Pub. No. US 2003/028996 A1) and Hull *et al.* (Pub. No. US 2004/0123516 A1) is withdrawn in the view of the Applicants' amendment and argument.

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Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

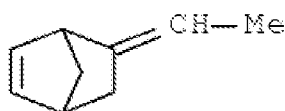
8. Claims 11, 14-21 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490) in view of Yerina *et al.* (Atomic force microscopy in analysis of rubber materials, Rubber Chemistry and Technology (2003), 76(4), 846-859).

9. Toshiaki Tanaka discloses an immersion oil composition for microscope comprises a liquid dienic polymer, e.g. liquid polybutadiene, as a first component and, as a second component, one or a combination of compounds including (a) chlorinated paraffins, (b) polybutene, (c) carboxylic acid esters, (d) liquid paraffins, (e) saturated aliphatic alcohols and (f) alicyclic alcohols; said composition having a refractive index in the from 1.501 to 1.519 and a Abbe's number in the range from 40 to 46 (Col 1, line 55). The term "polybutene" implied here means homopolymer of 1-butene, trans-2-butene, cis-2-butene or isobutylene, or copolymer of said monomer with other monomer and the polymerization products of a mixture of said monomers are also included in the copolymer (Col 2, line 42). The first component in the immersion oil composition is a liquid dienic polymer exemplified by liquid polybutadiene, liquid polyisoprene, liquid polychloroprene and the like, of which liquid polybutadiene is particularly preferable. The liquid dienic polymer should preferably have a number-average molecular weight in the range from 500 to 20,000 or, more preferably, from 1,000 to 15,000

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(Col 2, line 19) and within said oil composition in an amount of different formulation parts by weight within the instant applications' limitation claims as shown in Table I (Col 5, Col 7, Col 9, and Col 11) corresponding to the instant applicants' limitation claims 11, 16, 17, 18, 19, 20, 21 and 30. However, Toshiaki Tanaka fails to disclose a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane and a norbornene.

Yerina *et al.* disclose the application of atomic force microscopy (AFM) and electric force microscopy (EFM) for compositional mapping of a number of elastomers and related multicomponent materials. Several aspects of optimizing AFM experiments on polymers are discussed. AFM images reveal changes of EPDM morphology caused by crosslinking and by loading with fillers [carbon black (CB) and silica particles] and oil such as bicyclo[2.2.1]hept-2-ene, 5-ethylidene-(polymer with ethene and 1-propene) as shown below. Diffusion of oil from the elastomer component to the matrix is evidenced in the AFM images. Selective distribution of CB in the isotactic polypropylene (iPP) matrix is responsible for the electric conductivity of the thermoplastic vulcanizate corresponding to the instant applicants' limitation claims 11, 14, and 15.



It is held that it is ***prima facie*** obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their

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having been individually taught in the prior art.” *In re Kerkhoven*, 626 F.2d 846, 850,205 USPQ 1069, 1072 (CCPA 1980).

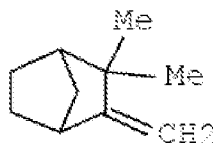
It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an immersion oil composition for microscope by Toshiaki Tanaka with a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornene as taught by Yerina *et al.* in order to that the resultant mixture may have properties suitable for an immersion oil for microscope including the dispersive power of light, refractive index, viscosity and others.

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490) and Yerina *et al.* (Atomic force microscopy in analysis of rubber materials, Rubber Chemistry and Technology (2003), 76(4), 846-859) as applied to claim 11, 14-21 and 30 above, and further in view of Sergeev *et al.* (Pat. No. SU 168825).

11. Toshiaki Tanaka and Yerina *et al.* disclose the features as discussed above. However, Toshiaki Tanaka and Yerina *et al.* fail to disclose a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane. Sergeev *et al.* disclose an immersion oil such as bicyclo[2.2.1]heptane, 2,2-dimethyl-3-methylene- as shown below for achroapochromatic micro-objectives is based on complex esters and cyclic hydrocarbons with OH and COOH groups. The oil contains abietate and derivatives of terpenes having the general formula I as set forth, where R is the residue of a camphene derivative To increase the viscosity of the oil, terpene derivatives having the general formula II as set forth,

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where R is the residue of a camphene derivative, are included in the compounds corresponding to the instant applicants' limitation claims 12 and 13.



It is held that it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an immersion oil composition for microscope by Toshiaki Tanaka with a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane as taught by Sergeev *et al.* in order to that the resultant mixture may have properties suitable for an immersion oil for microscope including the dispersive power of light, refractive index, viscosity and others.

12. Claims 22, 23-25, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490) and Yerina *et al.* (Atomic force microscopy in analysis of rubber materials, Rubber Chemistry and Technology (2003), 76(4), 846-859) as

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applied to claim 11, 14-21 and 30 above, and further in view of Hans-Joachim Weippert (Pat. No. US 5,817,256).

13. Toshiaki Tanaka and Yerina *et al.* disclose the features as discussed above, but fail to disclose the oil composition wherein said aromatic ester is present within said oil composition and is an ester of phthalic acid. Hans-Joachim Weippert discloses an immersion oil for microscopy. The immersion oil includes an ester or ether with tricyclodecane (TCD) structure as a main constituent and one or more high-boiling liquids as minor constituents. The immersion oil is free of halogens and exhibits a high UV-transmissibility and is characterized by low intrinsic fluorescence because the components utilized can be vacuum distilled (Col 1, line 40). The TCD-methylesters or di-(TCD-methylol)esters can be synthesized via esterification of these alcohols with dicarboxylic acids such as phthalic acid, isophthalic acid, terephthalic acid, malonic acid, succinic acid, malic acid, glutaric acid, adipic acid or sebacic acid in accordance with conventional esterification methods (Col 2, line 33). As further components for adjusting the refractive index, butyl benzyl phthalate and/or di-(propyleneglycol-1, 2) dibenzoate can, for example, be added (Col 2, line 44) and wherein said aromatic ether is present within said oil composition and is selected from the group consisting of dibenzyl ether with 11.5 weight % (Col 7, Table II, Example 7) corresponding to the instant applicants' limitation claims 22, 23, 24, 25, and 29.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an immersion oil composition for microscope by Toshiaki Tanaka and a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornene by Yerina *et al.* with aromatic ester and ether as taught of

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Weippert, in order to that the resultant mixture may have properties suitable for an immersion oil for microscope including the dispersive power of light, refractive index, viscosity and others.

14. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490), Yerina *et al.* (Atomic force microscopy in analysis of rubber materials, Rubber Chemistry and Technology (2003), 76(4), 846-859), and Joachim Weippert (Pat. No. US 5,817,256) as applied to claims 11, 14-21, 22, 23-25, and 29 30 above, and further in view of Sacher *et al.* (Pat. No. US 4, 526, 711).

15. Toshiaki Tanaka, Yerina *et al.* and Joachim Weippert disclose the features as discussed above, but fail to disclose the oil composition, wherein said aromatic ketone is present within said oil composition and is selected from the group consisting of acetophenone, propiophenone, benzophenone and combinations thereof. Sacher *et al.* disclose a refractive index fluid for optics and more particularly to such a fluid which can be employed as a coupling adhesive in the optical field (Col. 1, line 6). The recited optical coupling material, further include at least 1% by volume of a substituted 2-hydroxy benzophenone (reads on aromatic ketone) being 2-hydroxy-4-iso-octoxybenzophenone to impart a refractive index to the material of 1.688 at 25 °C with a pour point between 20°-30°C (Col. 6, line 10) corresponding to the instant applicants' limitation claim 27.

It is held that it is ***prima facie*** obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850,205 USPQ 1069, 1072 (CCPA 1980).

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It would have been obvious to one ordinary skill in the art to have substituted 2-hydroxy benzophenone with its homologues like "benzophenone" etc. because characteristics normally possessed by members of homologous series are principally the *same*, and vary but gradually from member to member; chemists knowing properties of one member of series would in general know what to expect in adjacent member, see *In re Henze*, 85 USPQ 261.

16. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490), Yerina *et al.* (Atomic force microscopy in analysis of rubber materials, Rubber Chemistry and Technology (2003), 76(4), 846-859), and Joachim Weippert (Pat. No. US 5,817,256) as applied to claims 11, 14-21, 22, 23-25, and 29 30 above, and further in view of Hirth *et al.* (Pat. No. US 4, 559, 147).

17. Toshiaki Tanaka, Yerina *et al.* and Joachim Weippert disclose the features as discussed above, but fail to disclose the oil composition, wherein said aromatic hydrocarbon is present within said oil composition and is selected from the group consisting of triisopropylbenzene and t-butylxylene. Hirth *et al.* disclose the use of glycerol 1, 2-carbonates for immersion oils as well as a novel immersion oil and its use in optics, especially in fluorescence microscopy (Col. 1, line 5). Hirth *et al.* also disclose that the immersion oils are soluble in the majority of customary organic solvents e.g. chloroform, methylene chloride, diethyl ether, ethanol, benzene, toluene, xylene (reads on aromatic hydrocarbon), petroleum ether and this substantially facilitates the cleaning of the objective and the object carrier (Col. 3, line 23) corresponding to the instant applicants' limitation claim 28.

It is held that it is ***prima facie*** obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to

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be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art.” *In re Kerkhoven*, 626 F.2d 846, 850,205 USPQ 1069, 1072 (CCPA 1980).

It would have been obvious to one ordinary skill in the art to have substituted xylene with its homologues like “t-butylxylene” etc. because characteristics normally possessed by members of homologous series are principally the *same*, and vary but gradually from member to member; chemists knowing properties of one member of series would in general know what to expect in adjacent member, see *In re Henze*, 85 USPQ 261.

Allowable Subject Matter

18. Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

19. Applicant's arguments with respect to claims 11-30 have been considered but are moot in view of the new ground(s) of rejection.

Examiner Information

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bijan Ahvazi, Ph.D. whose telephone number is (571)270-3449. The examiner can normally be reached on M-F 8:0-5:0. (Off every other Friday).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BA/
Bijan Ahvazi,
Examiner
Art Unit 1796

/Ling-Siu Choi/
Primary Examiner, Art Unit 1796

09/05/2008